REMARKS

In the Office Action dated April 10, 2008, then-pending claims 1-14 were rejected under 35 U.S.C. §102(e) as being anticipated by Nielsen et al.

In response, claims 1-14 have been replaced by claims 15-26. Applicants consider the presence of the estimation unit and the estimating step in original claims 1-14 to distinguish those claims over the teachings of the Nielsen et al. reference, but new claims 15-26, while still including those features, include further features or method steps to allow the estimating feature or step to the more precisely described.

Therefore, although the rejection of claims 1-14 is moot, Applicants will discuss how claims 15-26 are distinguishable over the teachings of the Nielsen et al. reference, under the assumption that the Examiner will still consider the Nielsen et al. reference to be relevant as prior art with respect to claims 15-26.

As set forth in independent claims 15 and 22, an estimation value is produced dependent on the electrical input signal that is emitted by the input device. This estimated value represents an estimation of the system distance, which is defined as the distance of the loop gain of the feedback loop to a predetermined stability limit thereof. Since this loop gain is influenced by, and changes dependent on, the amplification gain that is produced by the signal processor for the purpose of producing a processed signal that corrects the hearing impairment of a person who will wear the hearing aid, the loop gain, and thus the system distance, are changing constantly, as the amplification changes in order to correct the user's hearing impairment as the environment in which the hearing aid is being worn also changes.

The method and apparatus disclosed and claimed in the present application are thus based on a continuous alleviation of feedback dependent on this system distance. The feedback reduction device, in turn, undertakes an adjustable reduction, compensation or damping of the feedback dependent on this estimated value, by generating a parameter that influences the processed signal, dependent on the estimated value.

The Nielsen et al. reference discloses a device for feedback compensation in hearing devices that has a signal input device and a signal output device with a feedback reduction device connected therebetween.

Applicants submit that the Nielsen et al. reference does not disclose an estimation unit, or an estimating step, that is used for the purpose of feedback reduction. In substantiating the rejection of original claims 1-14, the Examiner referred to components 8 and 49 in Nielsen et al. as allegedly representing, or being the equivalent of, such an estimation unit. The Examiner stated it would be inherent that the stability limit is related to the distance loop gain of the feedback system. Applicants do not agree, however, that such an inherency exists, either in theory in the Nielsen et al. system itself.

The Nielsen et al. reference discloses a signal loop formed by the basic elements of the receiver 5, a feedback path 50, a microphone 1, and a hearing aid processing unit 3. This is apparent from Figures 1 and 2, as well as the description at column 2, lines 32-46 of Nielsen et al.

A feedback compensation filter 7 is used to compensate the feedback. An LMS algorithm unit 8 computes the correlation between a reference signal 11 (which is a signal fed to the receiver 5) and the error signal 10 (which is the compensated

input signal from the microphone 1). A feedback oscillation detector 49 is used to detect feedback. This feedback detection is undertaken on the basis of a comparison of two values with respect to *preset* thresholds. This is described in the Nielsen et al. reference at column 6, line 54 through column 7, line 14.

Therefore, Nielsen et al. reference does not teach determining (or estimating) a system distance, defined as the distance of the loop gain of the feedback loop to its predetermined stability limit. Instead, the Nielsen et al. system determines the feedback situation on the basis of *preset* thresholds. This necessarily means that the Nielsen et al. system is not capable of determining the feedback situation dependent on a variable value, such as the actual gain that is currently being employed for amplification in the processing unit 3 in Nielsen et al.

Only the present Applicants have had the insight to truly employ the system distance (or an estimation thereof derived from the electrical input signal) that is associated with the complete feedback loop, which includes the amplification gain generated by the signal processor that is used for correcting the hearing impairment of the user. Moreover, this signal distance represents the distance of this variable gain from a predetermined stability limit (zero dB, for example).

The Nielsen et al. reference does not take the actual gain of the hearing amplifier into account for controlling the feedback reduction. Instead, the Nielsen et al. system uses preset, individual signal values for estimating the feedback situation. Moreover, the Nielsen et al. system does not make use of a loop gain that includes the hearing amplification and feedback gain in the feedback loop.

As separate arguments in support of the patentability of dependent claims 16 and 22, Applicants submit that the Nielsen et al. reference does not teach detecting

first and second signal portions from the electrical input signal, and generating the estimated value for the system distance using those detected signal portions. Instead, Nielsen et al. teach producing a highpass signal from the compensated input signal, as shown in Figure 2 and element HP20 therein. The noise generator output 29 is low-pass filter 23, as stated at column 5, lines 60-61, and as indicated in Figure 2. This means that in the Nielsen et al. system a first signal is highpass-filtered and a *different* second signal is low-pass-filtered. There is no detection of a first and second signal portion from the same signal, namely the electrical input signal, as set forth in dependent claims 16 and 22.

The remaining dependent claims add further features or method steps to independent claims 15 and 22, and are submitted to be patentable over (i.e., not anticipated by) Nielsen et al. for the same reasons discussed above in connection with the independent claims.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by,

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